

Study Plots of WRV374, MCLM

This study was commissioned by the companies managed by Warren Havens and Jimmy Stobaugh ("SkyTel") to determine the service contours¹ of purported licensed station facilities, or sites, of WRV374, licensed to Maritime Communications/Land Mobile LLC ("MCLM"). This license has twenty-six fixed sites along the East coast of the USA, stretching from Miami, FL (location 18) to Raymond, Maine (location 20). Herein, "station" and "site" both represent the definition of a "station" from §80.5.

Assumed Parameters

Upon information and belief, and according to Skytel, MCLM has not reported any alleged actual operating station technical parameters, nor confirmed any published as its Universal Licensing System ("ULS") license. In order to determine Effective Radiated Power ("ERP"), assumptions were therefore made.

The parameters available for WRV374 on the ULS are location, frequency, ground elevation, antenna height to tip and transmitter power output ("TPO"). This study uses location, frequency and ground elevation as published in ULS, though these are not asserted by MLCM as being in actual use.

Line Loss

In six sites under WRV374 line loss is published by ULS as 1 dB and antenna gain to 12 dBi (9.85 dBd)-- locations 2, 3, 8, 12, 29 and 39. In order to determine the ERP necessary to calculate the required service contours, assumptions must be made. The first question concerns line loss and antenna gain, which is specified for only six of the twenty-six locations and is identical in all six cases. Should we infer that the remaining twenty locations are similar to those for which these two parameters are specified? We chose not to do that, as neither published parameter is reasonable in itself.

The six sites in question (the "specified" sites) have cable lengths, inferred from the antenna height, less six meters for the antenna's length and with three meters added for a lateral run to the transmitter, ranging from 34 meters (location 2) to 123 meters (location 39). Though the cable type is not given, a typical 7/8" coaxial cable operated at 217.5 MHz would lose approximately 2.45 dB/100 meters, in which case only one specified location would enjoy a loss of 1 dB or less. Thus, for all stations excepting those noted below, cable loss is inferred from the presumed cable length using typical losses as above, rather than the specified one decibel or unspecified value of zero loss.

Eight of the sites are represented as constructed atop buildings (locations 8, 12, 14, 15 17, 18, 22 and 33) , and for seven of those locations a one dB line loss is reasonable and is used here.

The building at site #33 (One World Trade Center) was destroyed on September eleventh, 2001, for which reason that site is not further considered.

Antenna Gain and System Losses

In the matter of antenna gain for the unspecified sites a similar answer is reached because of the unusual nature of an omnidirectional antenna operating in the 220 MHz band with a gain as high as 12 dBi or 9.85 dBd. Such an antenna could have been custom constructed, of course, with the resulting

¹ Contours determined using the method of FCC Rule §80.385(b)(1) with associated 9 dB correction factor

very large vertical aperture, but that would have been very noticeable. Until the matter might be further clarified by MCLM, an estimated 3.85 dBd as a more likely antenna gain is used here for both specified and unspecified locations. From the Form 601 instructions:

Item 35 Antenna Gain. The antenna gain for all fixed and temporary fixed VHF marine coast stations will be assumed to be **6 dB** (emphasis added)

From the schedule G instructions, this value is in dBi, which corresponds to 3.85 dBd.

Radio System Losses

In multichannel systems of this type, a combiner, duplexer and other RF hardware is usually employed, as it is generally needed for a commercially viable and efficient station using many channels, as CMRS stations are described by FCC. For this reason a typical insertion loss figure of 8.5 dB is used for all stations as the aggregated loss of these components.

Transmitter Output Power

As above, SkyTel finds no actual reported operating parameters for any site, specifically, any description of an actual transmitter used before the construction deadline and subsequent freeze on AMTS site-based licensed service contours. SkyTel asserts that at or before that deadline, all that was available were transmitters capable of only 25 watt output, and that value is therefore used as the TPO for all stations.

Siting Considerations

As described in the accompanying SkyTel Petition, actual purported station parameters are not provided by MCLM. Some station sites investigated by SkyTel show no antenna structure or associated building in proximity to stated coordinates. For these reasons, SkyTel has assumed a height-to-tip of 60% of the published ULS figure.

Contour Calculations

In addition to the defined 38 dBμ service contour, 17 dBμ contours, following the same method, are also plotted, the reasons for which are given in the accompanying Petition. 38 dBμ contours are drawn in green, while the 17 dBμ contours are in blue.

The plotted contours may be seen in the appended Figure 1 (Southeast) and Figure 2 (Northeast). The site parameters used are given in Table 1. These contours were plotted using software created under my personal direction, and correspond to the procedures specified in CFR 47 §80.385(b)(1). My credentials are a matter of record at the FCC, which itself uses my software.

/s/

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Figure 2: Licensed Service Contours for WRV374 (Northeast section)

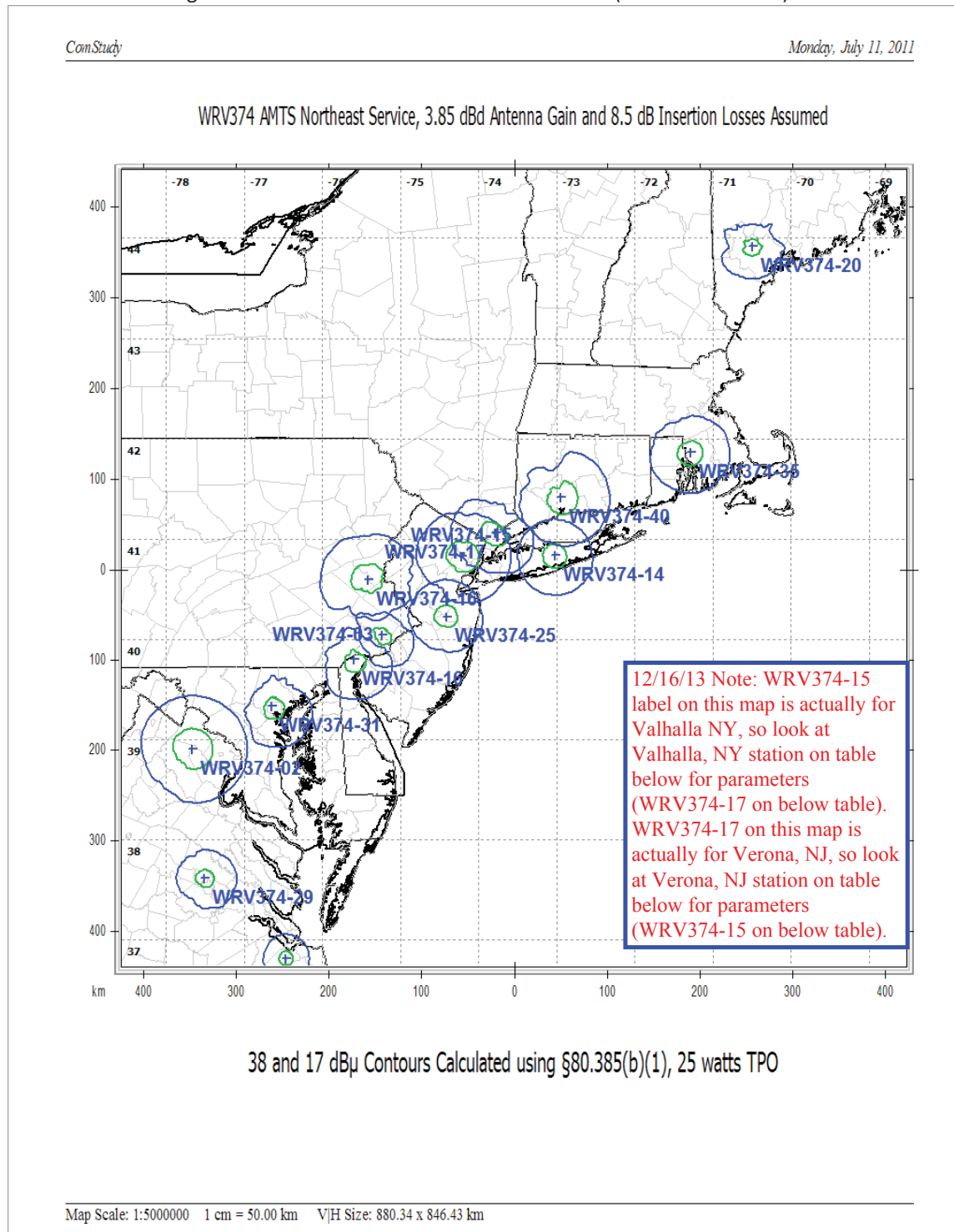
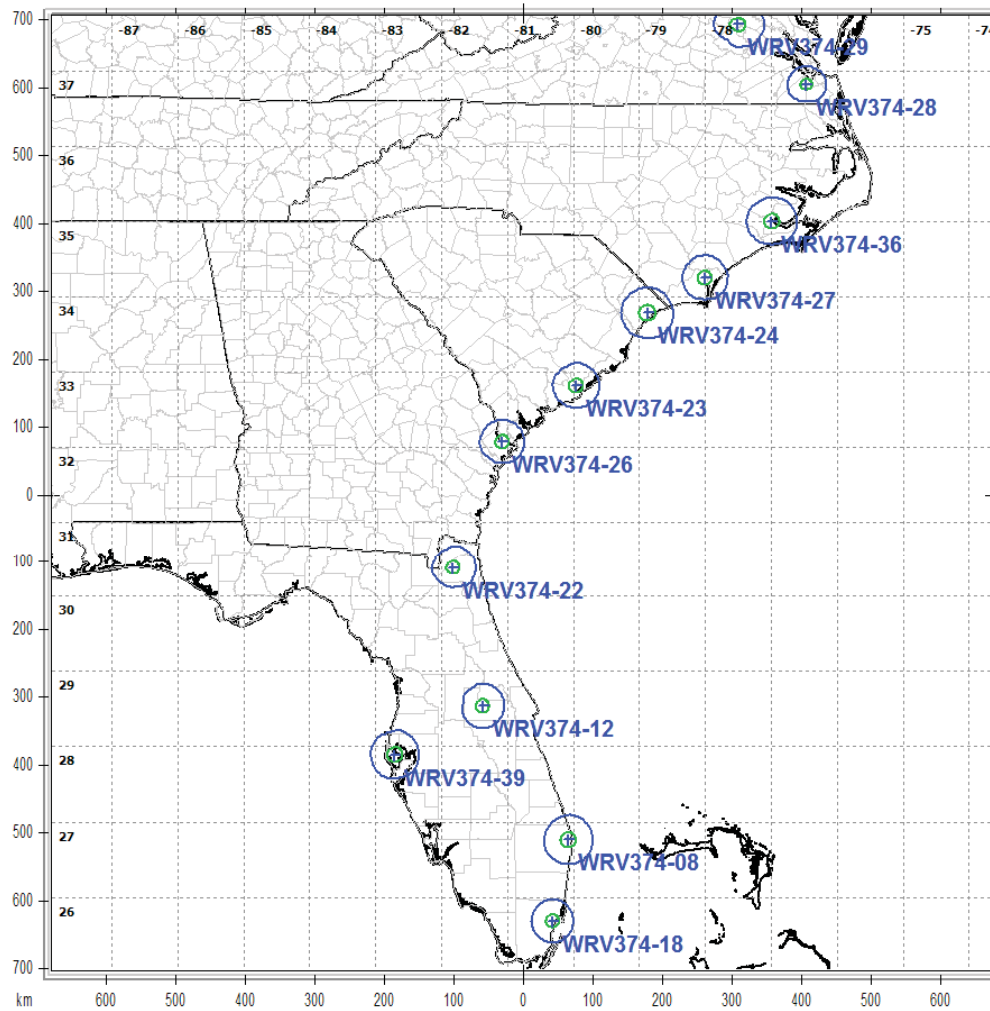


Figure 1: Licensed Service Contours for WRV374 (Southeast section)

ComStudy

Monday, July 11, 2011

WRV374 AMTS Service Southeast, 3.85 dB Antenna Gain and 8.5 dB Insertion Losses Assumed



38 dBμ and 17 dBμ Contours Calculated using §80.385(b)(1), 25 watts TPO

Map Scale: 1:8000000 1 cm = 80.00 km V/H Size: 1408.55 x 1354.28 km

Table 1: Site Parameters used in Contour Calculations

Call Sign	ST	City	Lat	Lon	Location	AGL_m	60%AGL	GL_m	Tower	Line Loss	ERP dBm	ERPw
WRV374-02	VA	Manassas	38-54-23.4 N	77-40-19.0 W	Bull Run Mt.	37	22.2	371	TWR	0.47	38.88	7.7
WRV374-03	PA	Philadelphia	40-02-30.4 N	75-14-22.6 W	Antenna Farm	64	38.4	68	TWR	0.87	38.48	7.0
WRV374-08	FL	Magnolia Park	26-45-44.2 N	80-04-40.2 W	Hill Ave.	116	69.6	5	BLDG	1	38.35	6.8
WRV374-12	FL	Orlando	28-32-22.0 N	81-22-43.3 W	Citrus Center	85	51	30	BLDG	1	38.35	6.8
WRV374-14	NY	Selden	40-50-31.4 N	73-01-34.4 W	Adirondak Dr	49	29.4	91	BLDG	1	38.35	6.8
WRV374-15	NJ	Verona	40-50-04.4 N	74-13-20.5 W	Claridge House	61	36.6	189	BLDG	1	38.35	6.8
WRV374-16	DE	Winterthur	39-48-01.4 N	75-35-39.7 W	Delaware 52	58	34.8	107	TWR	0.78	38.57	7.2
WRV374-16	PA	Allentown	40-35-54.4 N	75-25-05.7 W	Savercool Ave	66	39.6	247	TWR	0.9	38.45	7.0
WRV374-17	NY	Valhalla	41-04-13.3 N	73-47-33.5 W	Westchester CC	52	31.2	154	BLDG	1	38.35	6.8
WRV374-18	FL	Miami	25-41-07.5 N	80-18-53.3 W		86	51.6	2	BLDG	1	38.35	6.8
WRV374-20	ME	Raymond	43-55-28.3 N	70-29-26.2 W	Brown Hill	122	73.2	91	TWR	1.72	37.63	5.8
WRV374-22	FL	Spaulding	30-22-45.9 N	81-49-59.4 W	Jay Rd	64	38.4	27	BLDG	1	38.35	6.8
WRV374-23	SC	Charleston	32-49-14.6 N	79-57-24.3 W	Brasswell St.	91	54.6	5	TWR	1.26	38.09	6.4
WRV374-24	SC	Conway	33-47-06.6 N	78-52-43.1 W	Myrtle Beach	122	73.2	13	TWR	1.72	37.63	5.8
WRV374-25	NJ	Perrineville	40-13-31.4 N	74-24-55.5 W	Sweetman Av	37	22.2	104	TWR	0.47	38.88	7.7
WRV374-26	GA	Savannah	32-04-21.8 N	81-04-44.4 W	Perry Lane	91	54.6	2	TWR	1.26	38.09	6.4
WRV374-27	NC	Navassa	34-15-04.6 N	78-00-41.0 W	Myrtle Ave	91	54.6	8	TWR	1.26	38.09	6.4
WRV374-28	VA	Suffolk	36-49-00.5 N	76-28-03.8 W	625 & 337	53	31.8	6	TWR	0.71	38.64	7.3
WRV374-29	VA	Richmond	37-36-52.5 N	77-30-54.9 W	Basie Rd	61	36.6	78	TWR	0.82	38.53	7.1
WRV374-31	MD	Baltimore	39-20-10.4 N	76-39-01.9 W	Hooper Ave	122	73.2	94	TWR	1.72	37.63	5.8
WRV374-33	NY	NYC	40-42-18.4 N	74-00-49.5 W	World Trade Ctr	229	137.4	8	BLDG	NA		
WRV374-34	PR	Fajardo	18-18-28.8 N	65-47-39.6 W		79	47.4	1005	TWR	1.09	38.26	6.7
WRV374-35	MA	Rehobeth	41-51-54.4 N	71-17-13.2 W	Pine St.	122	73.2	64	TWR	1.72	37.63	5.8
WRV374-36	NC	New Bern	35-00-02.6 N	76-59-30.8 W	Hwy 70E	87	52.2	19	TWR	1.21	38.14	6.5
WRV374-39	FL	Clearwater	27-53-36.1 N	82-42-22.4 W	Ulmerton Rd	126	75.6	3	TWR	1.78	37.57	5.7
WRV374-40	CT	Hamden	41-25-23.3 N	72-57-04.4 W	Talmadge Rd	105	63	195	TWR	1.47	37.88	6.1